



Advanced technologies for the development of large-scale prototypes in corrosion-resistant steels – PROTOMAX

PROJECT DESCRIPTION

Within the framework of the PROTOMAX project, several companies from the industrial and metallurgical sectors are collaborating in the development of innovative solutions aimed at manufacturing large-scale prototypes in advanced steels for demanding environments.

The project's main objective is to research and validate technologies that enable the development of large components with high mechanical performance and strong corrosion resistance, especially for applications in critical environments such as deep geothermal energy.

The activities carried out range from the analysis of materials and manufacturing processes to the design and optimisation of industrial-scale prototypes. These include the development of new alloys, improvements in forming and machining processes, and the validation of performance under extreme operating conditions.

The project also includes the manufacture and validation of prototypes in representative environments, making it possible to assess their technical, economic and operational viability. In this way, the aim is to ensure the reliability and durability of the components developed, contributing to the advancement of industrial solutions in emerging energy sectors.

The participating entities work in a coordinated manner on the development of experimental models, laboratory tests and industrial validations, with the aim of consolidating technological solutions that enable this type of component manufacturing to be scaled up.

In this context, PROTOMAX acts as the lead entity of the project, coordinating the research and development activities, while the remaining partners contribute their specialised knowledge in metallurgical processes, advanced manufacturing and industrial validation, ensuring a comprehensive approach in the development of the proposed solutions.

CONSORTIUM

Participants:

- Lead partner: TUBACEX TUBOS INOXIDABLES, S.A.
- Partner 2: ACERÍA DE ÁLAVA, S.A.

Basque Network of Science, Technology and Innovation (RVCTI) agents:

- RVCTI 1: TUBACEX INNOVACIÓN, S.L.
- RVCTI 2: FUNDACIÓN TECNALIA RESEARCH & INNOVATION
- RVCTI 3: FUNDACIÓN AZTERLAN

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- **Consortium budget:** €1,065,547.50
- **Duration:** 2025–2026



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